

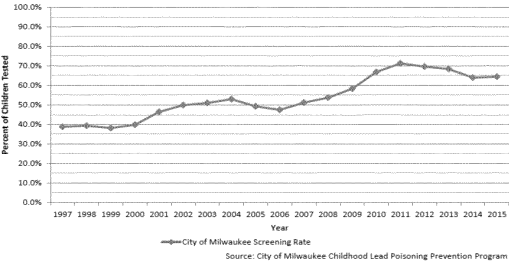
Ghassan Korban and Jennifer Gonda
City of Milwaukee

**WATER QUALITY AND LEAD
SERVICE LINES: A LOCAL
IMPERATIVE AT THE
NATIONAL LEVEL**

Timeline of Our City's Response to this Public Health Challenge

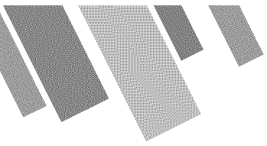
»The City has been proactively addressing its lead challenges long before the Flint water crisis, including screening children for lead exposure since 1997 (see charts).

City of Milwaukee Screening Rate for Children 12 to 35 Months Old - 1997 - 2015



City of Milwaukee Screening Rate for Children Less Than 6 Years Old - 2000 - 2015

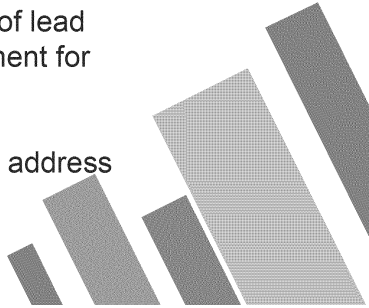


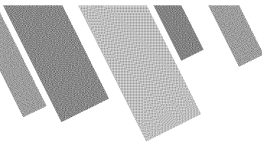


» In September 2016, the City formed a Water Quality Task Force to continue to address the safety and quality of the City's tap water.

» The Mayor and Common Council approved an ordinance effective January 1, 2017 mandating the replacement of lead water service lines and establishing a special assessment for lead water service lines on private property.

» The City is currently working with State legislators to address our city's water and lead challenges at the state level.

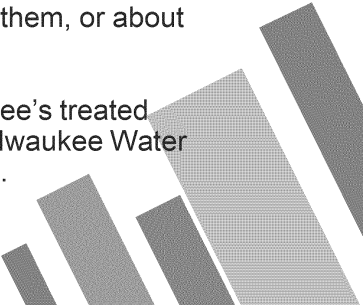




»In March of 2017, Department of Public Works Commissioner Ghassan Korman testified in support of state legislation that aides water public utilities in replacing lead service lines (LSLs), testifying that LSLs could be an issue for any community in the state that has pre-1951 housing.

There are approximately 170,000 LSLs throughout the State of Wisconsin and Milwaukee has approximately 70,000 of them, or about 40% of the statewide total.

»It is important to state that lead is not found in Milwaukee's treated source water and that drinking water provided by the Milwaukee Water Works meets all federal standards for safety and quality.





2017 Lead Service Line Replacement Program Plan and Budget

»Replace lead service lines serving 300 daycares and schools.

☐ \$1.8 million Water Works ratepayer funds (utility side)

☐ \$1.6 million Safe Drinking Water funding (private side)

»Replace lead service lines that experience leaks (approx. 300)

☐ \$1.8 million Water Works ratepayer funds (utility side)

☐ \$1 million Safe Drinking Water funding (private side)

☐ \$500,000 Special Assessment from property owners (private side)





Lead Service Line Replacement Program: Long-term Outlook

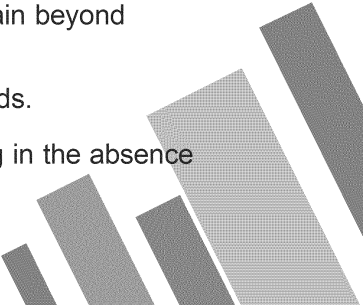
» Estimated cost to replace the utility owned and privately owned portions of 70,000 lead service lines: **\$770 million** (in 2016 dollars)

» The EPA's State Revolving Loan Fund principal forgiveness program will serve a critical role in meeting these estimated costs.

» \$1 million annual Safe Drinking Water funding is uncertain beyond 2018.

» The City is aggressively pursuing State and Federal funds.

» City subsidy is funded through levy-supported borrowing in the absence of State/Federal funding.



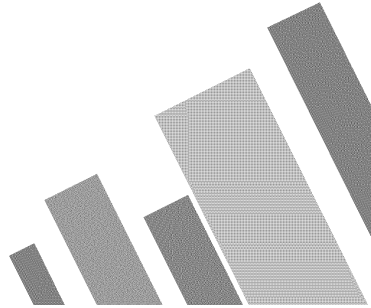


Lead Service Line Replacement Program: Long-term Outlook

»In 2018 and beyond, the replacement program will be scaled up.

--Factors that will affect how quickly the City can scale up the program include:

- ☐Approval of water rate increases
- ☐Pressure on levy-supported capital budget
- ☐Private sector capacity to perform the work

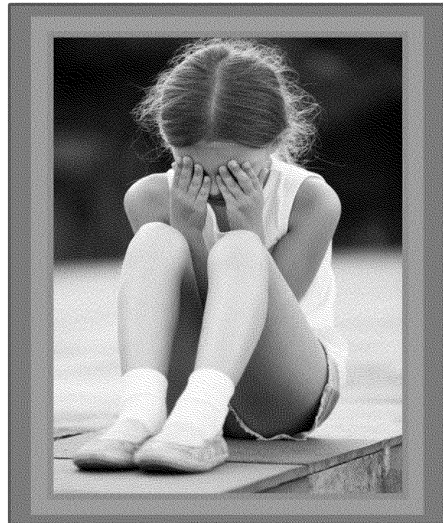


LEAD POISONING:

The most serious environmental health threat to young children in the U.S.

Children are more susceptible based upon having more small intestine receptors (40% more) that absorb lead, as well as having a developing brain/body and lower body weight.

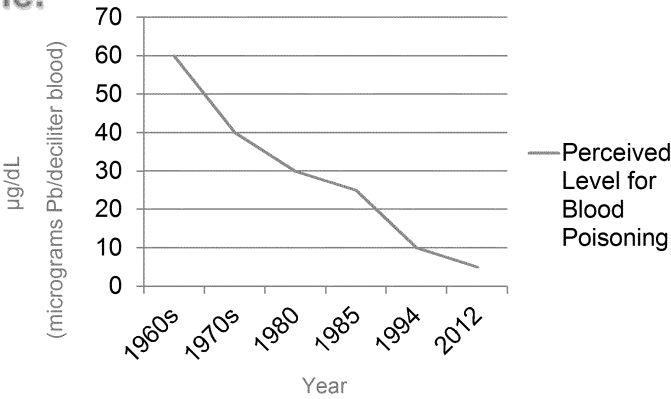
- » Interferes with normal brain development.
- » 2-4 IQ point deficit for each microgram of lead per deciliter of blood increase above 5 micrograms per deciliter.



**WI Dept. Health Services. 2008. Report of Childhood Lead Poisoning in Wisconsin. PPH 45109 (5/08)*

** New England Journal of Medicine. 348;16 www.nejm.org April 17, 2003*

The CDC blood lead “Reference Value”, the perceived level for blood poisoning, has decreased over time.



Lead poisoning in Wisconsin is a statewide problem, but **Milwaukee** is most affected.

» More than 44,000 state children reported above acceptable Reference Value from 1996-2006.

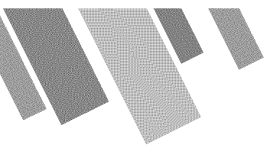
» In 2016, 8.6% of Milwaukee children screened for lead had high blood-lead levels. This is down from 38% in 2003.*

» By comparison, Flint, Michigan reported 5% of children screened in 2016 reported elevated blood-lead levels.*

Old lead paint was reported as the most significant cause of exposure.#

Wisconsin Dept. of Health Services

* Reuters/City of Milwaukee Legislative Reference Bureau



Wisconsin Reported Lead Poisoning Cases 1996 - 2006

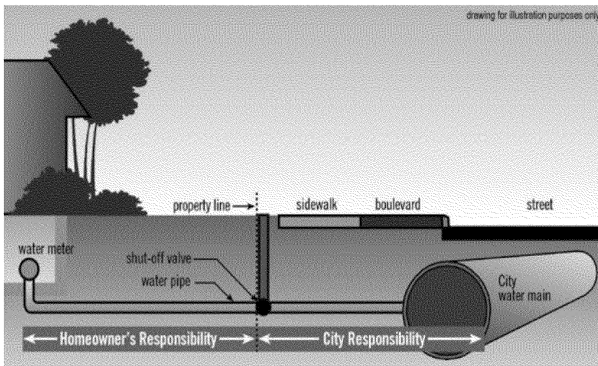


LEAD IN WATER

- » Historically managed as a secondary source of exposure.
CDC claims 10-20% of collective U.S. lead contamination comes from drinking water.
That figure reaches 40-60% for formula-fed babies. *
- » Many communities are now paying extra attention to water as a source of exposure after Washington, D.C. (2001) and more recently Flint, MI (2014).
Lake Michigan water & city water mains are lead free. Issues arise with leaded water-service laterals and/or with interior sources of lead (flux, solder, pipes, brass fixtures).
- » There are several methods for managing lead in water, but **full removal** is the only permanent solution.

**Study by Monty C. Dozier/Mark L. McFarland, University of Texas.*

LEAD-WATER ISSUES IN MILWAUKEE



» Roughly 70k leaded service lines in the City of Milwaukee....maybe more?

» Lead laterals represent roughly 60-70% of the lead in drinking water sources as a composite average, though this can be deceiving.

» Concerns about the City's policy of replacement of utility portion of erupted water service line disrupting lead pipes and dislodging lead flakes.



COMPLICATING ISSUES

» Interior Plumbing as a Source of Lead

Testing done in MPS schools showed 16% of the interior faucets or water sources to exceed EPA safe levels for lead, even though no school tested had a lead service lateral (all were cast iron).

» Galvanized Steel Pipes

Rusted interior plumbing holds lead in its rust for years and provides slow release of lead for many years, even after lead service line is replaced.

» Galvanic Effect

Electrochemical process where presence of one metal increases corrosion of another in presence of an electrolyte. The issue is found where copper service lines/plumbing precedes connected leaded lines/plumbing. This increases lead concentration leached into the water.

City Water Quality Task Force

» Representing the City of Milwaukee



Ald. James Bohl, Jr., Chair
Common Council, 5th District



Ald. Cavalier Johnson
Common Council, 2nd District



Bevan Baker
Commissioner of Health



Ghassan Korbhan
Commissioner of Public Works



Ald. Jose Perez
Common Council, 12th District

» Representing the Private Sector



Ben Gramling
Sixteenth Street Community Health Center



Dr. Patricia McManus
Black Health Coalition of Wisconsin

- Created by Common Council File 160438, and adopted July 26, 2016.
- Major emphasis of city— replace water service laterals as the primary source of lead in water.
- WQTF has met seven times between September and March with 3 more planned meetings before April 28, 2017.

TASKED WITH:

Exploring the problem of lead in the City's drinking-water infrastructure.

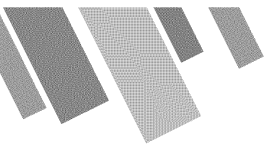
Investigating and making recommendations regarding additional ways to ensure long-term health and safety to Milwaukee's drinking water.

Provide final findings and policy recommendations to the Common Council.



Major Findings of Task Force

- » Washington, DC & Flint, MI crises are unrelated to Milwaukee's situation.
- » Water testing mandated by the EPA is done to test the effectiveness of corrosion control methods used by the Water Works.
- » Historic process of replacing utility side service only means that many in the community could be left with copper lines connected with lead (Galvanic effect).
- » With limited resources, replacement of service lines should be prioritized around daycares and schools first. Water filters should also be prioritized for vulnerable populations (includes expecting mothers along with young children).



Major Findings of Task Force

» Adequate flushing continues to be the single greatest mass-community “lead reduction” method other than complete replacement of exterior and interior plumbing sources.

EPA/CDC recommendation for flushing after 6 hours stagnancy is potentially inadequate and may not reflect the science of lead leaching. Their standard is based upon a “worst case” lead or copper exposure period.

❑ Policy of replacing service lines does not entirely address the issue of lead exposure through water.



Major Findings of Task Force

- » A robust media campaign addressing lead in paint as well as in water and urging lead testing of young children is vital to stemming the severity of the lead poisoning issue.
- » Wisconsin state law is extremely rigid and does not currently provide enough flexibility for local governments to fund massive capital projects in any reasonable duration of time.
 - Prohibitions on local taxing sources and state imposed levy limits.
 - State law/PSC prohibition of using water revenues to fund private portion of LSL.
 - Milwaukee does not rank well in Drinking Water State Revolving Fund because of our size and that we are in compliance.
- » Lead removal/remediation and mitigation (both for water and paint) will be a long-term effort.

Major Findings of Task Force

The City's determination of
70,000
 lead service lines may
 not fully operate
 1951... lines
 reflects... portion of
 the line and private side.
 and... code
 mandated... side of
 the line was affected.

Madison's & Lansing, MI's Lead Service Line Replacement Programs Show Initial City Cost Estimates May Decline Over Time.



Madison



Lansing

- 2001 to 2012. **8,000** water lines replaced.
- City covered 1/2 of cost for work up to \$2,000 for private side work (max \$1,000 rebate).
- Average private reimbursement of \$675.85 based upon \$1,350 in average private side replacement cost.
- Work started in 2004.
- City owned entire line-no public/private side.
- PSC/State law allowed city to use water revenues to pay for replacement.
- Average cost was \$9,000 when started, but reduced to \$3,600 through innovated processes and economy of scale cost savings.

Legislation/Policies Enacted During WQTF's Inception

» City Budget (2017 -)

- \$3.4 million for lead service lines replacement at 385 daycares, including \$1.6 million from the Drinking Water State Revolving Loan Fund
- \$2.8 million for 300 emergency service line replacements, including \$1 million from the Drinking Water State Revolving Loan Fund
- Water Quality Chemist/Construction Supervisor Positions (new)
- Funding for filters

Free Community Filters/Reduced Cost Filters Through Community Partnership with A.O. Smith

Common Council File 160742 from Dec. 13, 2016:

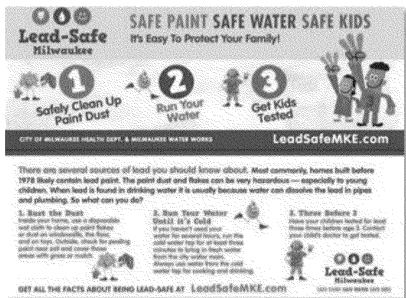
- ☐ Mandates the replacement of lead water-service lines under certain circumstances.
- ☐ Establishes a Special Assessment Policy for Private-side LSL replacement.
- ☐ Subsidizes 2/3 cost up to \$1,600 max for property owners' share of cost of LSL replacement.
- ☐ 10-year payment as special assessments at low interest rate.

Legislation/Policies Enacted During WQTF's Inception

» “Lead Safe Milwaukee” Public Service Campaign Starts (February)

» CC File 160964 - Ordinance mandating annual testing of all water fixtures in city-controlled charter schools.

» CC File 161645 - Resolution calling on state to mandate regular testing for all schools and licensed daycares statewide.



WQTF RECOMMENDATIONS

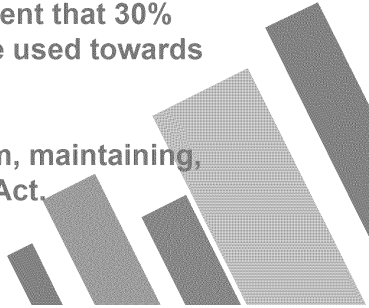
- ✓ Provide adequate City resources, supplemented by resources from foundations and corporations, to ensure vulnerable populations have access to lead-removing water filters certified to remove lead by NSF/ANSI Standard 53.
- ✓ Urge the State of Wisconsin to provide greater funding to the City to eliminate sources of lead & allow greater water-utility flexibility to pay for lead water-service line replacement.
- ✓ Use area universities as resources to address the lead-water issue.
- ✓ Educate residents regarding internal plumbing as a source of lead.
- ✓ Provide outreach to local healthcare providers on the need for lead testing of infants and toddlers.
- ✓ Support State legislative action requiring testing of water in schools and daycares; or, in its absence, explore city options for mandatory testing of water in city schools and daycares.

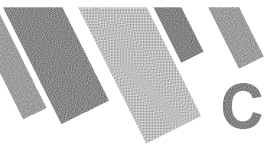
WQTF RECOMMENDATIONS

- ❑ Explore additional financial assistance options for low-income homeowners' replacement of the privately-owned side of water-service lines, while maintaining a balanced payment program for most to ensure timely removal of service lines.
- ❑ Seek new partners and avenues to expand public service information /announcements on managing the potential risks relating to lead-contaminated water, with a special emphasis on vulnerable populations, and ensure the City's ongoing public information campaign presents a balanced approach to all lead risks.
- ❑ Pass City legislation to provide private-side lead service line identification, removal and special assessment cost-share criteria for homes constructed between 1952 and 1962.
- ❑ Contract for an outside review of Milwaukee Water Works' treatment additives and corrosion-control methods.
- ❑ Seek to balance workforce development opportunities with timeliness and cost-containment efforts on the lead service line removal program.



Federal Legislative Priorities for Awareness

- »1) The City supports renewing the WIIN Act and appropriating funds for the “Reducing Lead in Drinking Water” grant program.
 - »2) The City supports creating a federal requirement that 30% of Drinking Water State Revolving Loan Funds be used towards lead service line replacements.
 - »3) The City supports expanding, or at a minimum, maintaining, the Water Infrastructure Finance and Innovation Act.
- 



City's Needs from the EPA

»Lean on Wisconsin Department of Natural Resources to allow utility rate revenue to pay for private cost.

»Allow the State Revolving Loan Funds to be used for this purpose. The City intends to express its interest in this allowance in its next Intended Use Plan (IUP).

»Assistance researching and piloting new technologies that could reduce the cost of LSL replacement.

